# DEPARTMENT of ENVIRONMENTAL SERVICES Water Division - Watershed Management Bureau

#### LAKE TROPHIC DATA

### MORPHOMETRIC:

Lake: SHAWS POND	Lake Area (ha):	25.09
Town: NEW DURHAM	Maximum depth (m):	4.9
County: Strafford	Mean depth (m):	3.0
River Basin: Merrimack	Volume (m³):	761000
Latitude: 43°31'57" N	Relative depth:	0.9
Longitude: 71°08'25" W	Shore configuration:	1.63
Elevation (ft): 760	Areal water load (m/yr)	
Shore length (m): 2900	Flushing rate $(yr^{-1})$ :	2.90
Watershed area (ha): 440.3	P retention coeff.:	0.57
<pre>% watershed ponded: 0.0</pre>	Lake type: natura	l w/dam

BIOLOGICAL:	27 January 2000	27 August 1999
DOM. PHYTOPLANKTON (% TOTAL) #1	RHIZOSOLENIA 80%	DINOBRYON 55%
#2	ASTERIONELLA 10%	TABELLARIA 25%
#3		ASTERIONELLA 15%
PHYTOPLANKTON ABUNDANCE (units/mL)		
CHLOROPHYLL-A (µg/L)		4.08
DOM. ZOOPLANKTON (% TOTAL) #1	ASPLANCHNA 64%	ACANTHOCYSTIS 34%
#2	KERATELLA 22%	NAUPLIUS LARVA 30%
#3	POLYARTHRA 14%	
ROTIFERS/LITER	36	6
MICROCRUSTACEA/LITER	<1	64
ZOOPLANKTON ABUNDANCE (#/L)	36	125
VASCULAR PLANT ABUNDANCE		Common
SECCHI DISK TRANSPARENCY (m)		3.8
BOTTOM DISSOLVED OXYGEN (mg/L)	13.0	8.6
BACTERIA (E. coli, #/100 ml) #1		< 10
#2		< 10
#3		

## SUMMER THERMAL STRATIFICATION:

### not stratified

Depth of thermocline (m): None Hypolimnion volume  $(m^3)$ : None Anoxic volume  $(m^3)$ : None

CHEMICAL:			SHAWS POI		
·	27 Janua	ary 2000	27 August 1999		
DEPTH (m)	1.5	3.5	1.0		3.0
pH (units)	6.6	6.6	6.8		6.8
A.N.C. (Alkalinity)	10.9	10.0	9.2		9.1
NITRATE NITROGEN	< 0.05	< 0.05	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	< 0.10	< 0.10	0.20		0.20
TOTAL PHOSPHORUS	0.004	0.006	0.006		0.013
CONDUCTIVITY (µmhos/cm)	58.0	58.8	52.7		52.9
APPARENT COLOR (cpu)	32	36	25		25
MAGNESIUM			0.48		
CALCIUM			4.3		
SODIUM			5.3		
POTASSIUM			< 0.40		
CHLORIDE	8	8	7		7
SULFATE	3	3	2		2
TN : TP			33		15
CALCITE SATURATION INDEX			2.9		

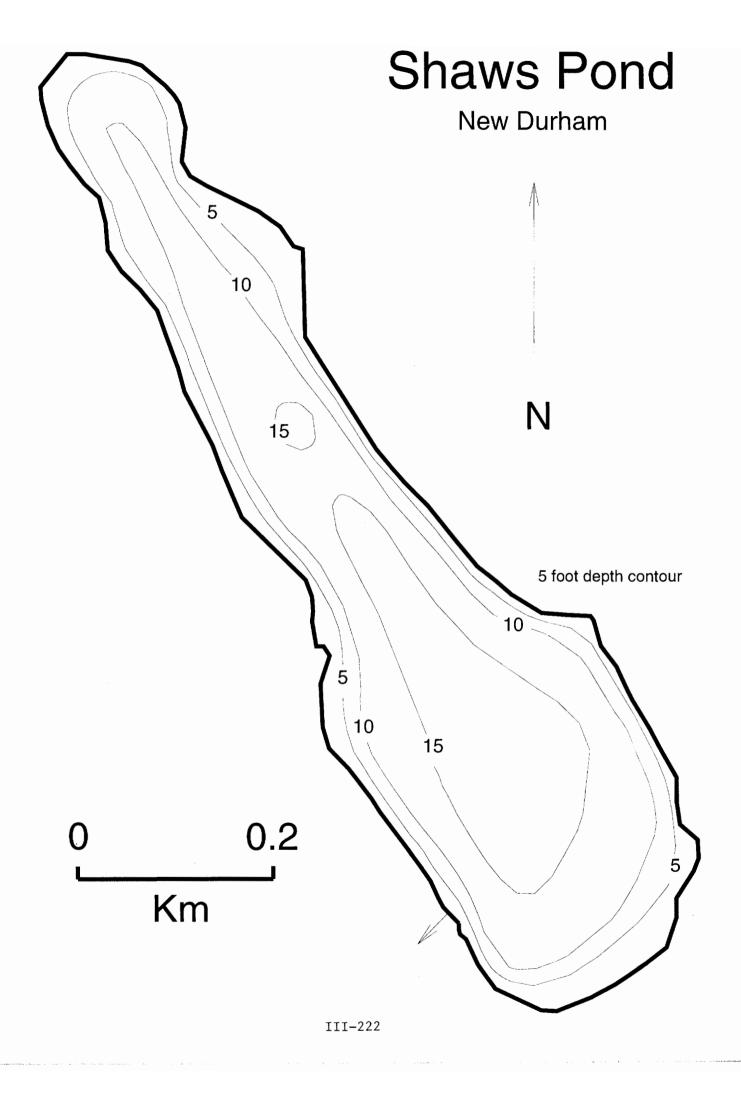
All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1999

D.O.		S.D.	PLANT	CHL	TOTAL	CLASS
**	r	2	3	1	6	Meso.

# **COMMENTS:**

1. This pond was previously surveyed and classified in 1984. There was no change in classification and little change in water quality between the two years.



#### FIELD DATA SHEET

LAKE: SHAWS POND DATE: 08/27/1999

TOWN: NEW DURHAM

WEATHER: OVERCAST

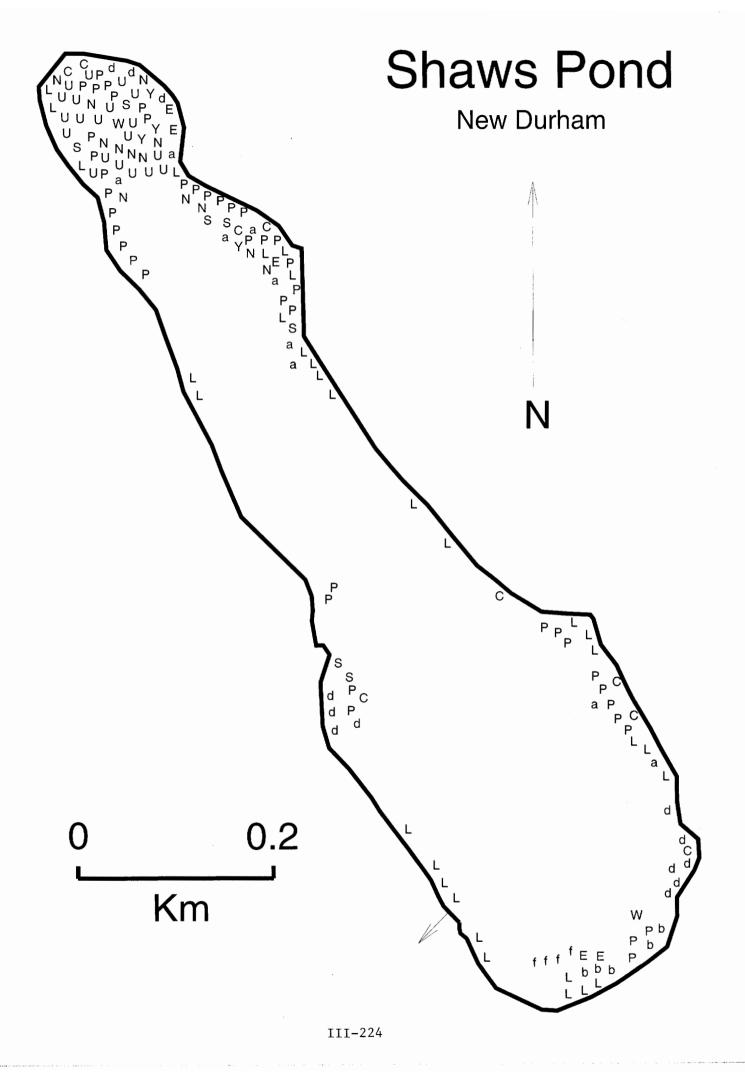
DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	23.5	9.7	111 %
1.0	23.4	9.7	111 %
2.0	23.4	9.7	112 %
3.0	22.9	10.4	118 %
4.0	22.6	8.6	97 %
30 10 7			

SECCHI DISK (m): 3.8 COMMENTS:

BOTTOM DEPTH (m): 4.3

TIME: 1130

\*Dissolved oxygen values are in mg/L



### AQUATIC PLANT SURVEY

LAK	E: SHAWS POND	TOWN: NEW DURHAM	DATE: 08/27/1999			
Key	PLANT NAME					
кеу	GENERIC COMMON		ABUNDANCE			
P	Pontederia cordata	Pickerelweed	Common			
s	Sparganium	Bur reed	Common			
L	Lobelia dortmanna	Water lobelia	Scat/Common			
d	Dulichium arundinaceum	Three-way sedge	Scat/Common			
b	Scirpus	Bulrush	Common			
a	Potamogeton amplifolius	Bass weed	Common			
С	Carex	Sedge	Sparse			
W	Potamogeton	Pondweed	Sparse			
E	Eriocaulon septangulare	Pipewort	Scattered			
N	Nymphaea	White water lily	Scat/Common			
Y	Nuphar	Yellow water lily	Scattered			
U	Utricularia	Bladderwort	Scat/Common			
f		Filamentous algae	Sparse			
	4					

### **GENERAL OBSERVATIONS:**

- 1. Plants were locally abundant in the northern inlet end.
- 2. Shoreline areas where rooted plants were absent or sparse were rocky areas.
- 3. Bladderwort is not listed above or depicted on the map but was observed among the abundant plants at the northern end.

OVERALL ABUNDANCE: Common

- Freshwater mussels were common and a kingfisher was observed.
  Both erect and floating leaf species of bur reed were present.
  Filamentous algae was present at the southern (outlet) end of the pond.